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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/820,341

Applicant(s)

COOPER ET AL.

Examiner

Eunice Ng

Art Unit

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/88)
Paper No(s)/Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 8 and 15 recite the limitation "said concept" in line 4 of each of the claims, lines 5-6 of claim 8, and line 6 of claim 15. There is insufficient antecedent basis for this limitation in the claim. Line 2 in each of claims 8 and 15 recite "a concept and other concepts." Thus, it is unclear which concept "said concept" is referring to. Appropriate correction is required.

Claim Objections

3. Claim 11 is objected to because of the following informalities: extraneous "and" at the end of line 2. Appropriate correction is required.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-8, 11-15, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Li, US Patent 6,480,843.

Regarding claim 1, Li teaches a system for generating a response comprising: a language analysis module configured to parse a query into elements (col. 11, ll. 20-24, "Fig. 6 shows...A query 'retrieve documents containing the words car and dealer' is rewritten as shown by adding additional words relevant to car and dealer"; parsing the query into "car" and "dealer");

a rules engine coupled to said language analysis module to receive said elements and configured to compare a condition of a rule against said elements, said rule configured to perform an action to retrieve information (col. 11, ll. 20-36, teaches, after receiving said elements, "relevant words of semantic similarity and syntactic co-occurrence relationship are determined from tables in Fig. 3"); and

a response generator coupled to said rules engine and configured to retrieve said information for presentation in a portion of a display that adjusts proportionately to the degree of importance of said information (col. 13, ll. 37-63, teaches "matching keywords are retrieved for ranking...rank their degrees of relevance...ranked based on the degrees of relaxation in matching words in the document with words in the query..."; Fig. 8).

Regarding claim 2, Li teaches a multi-layered concept repository configured to store a plurality of concepts, at least one of said plurality of concepts configurable to relate to a synonymous concept (col. 10, ll. 45-56, teaches, "a word in the Sem_word_list...may belong to multiple Concept#...when a query contains a word which is located in multiple Concept#, each of the different Concept# should be taken into account during query processing" and ll. 61-63, teaches, "WordNet can provide synonyms for a word in different sense interpretations ranked by how often such senses are used"; see also Fig. 3, words are grouped into semantically similar concepts).

Regarding claim 3, Li teaches wherein each of said plurality of concepts is definable as an expression of a regular expression language (Figs. 3- 4 illustrate that the plurality of concepts is definable as an expression of English [a regular expression language]).

Regarding claim 4, Li teaches: content storage for storing said information (col. 16, ll. 11-15, teaches “a database for storing a collection of documents...database may include an index for storing concepts (e.g. semantical or syntactical concepts) and their relationships to the documents in the collection); and a semantic indexing engine configured to index said information by one of said plurality of concepts (col. 16, ll. 16-19, teaches “system may further include an indexer for creating the index and for also creating an index containing higher level granularity concepts and their relationships to the documents in the collection”).

Regarding claim 5, Li teaches a response formatter configured to generate said portion of said display, wherein said portion is adjusted based on a scope of said information (col. 13, line 64 – col. 14, line 5).

Regarding claim 6, Li teaches wherein said scope is determined by one of a word, a phrase, a sentence and a document (col. 13, line 64 – col. 14, line 5).

Regarding claim 7, Li teaches wherein said response generator determines the importance of said information based on a quantifiable measure distinguishable from other actions of other rules, where said quantifiable measure is determined by one or more of a relative weight determinator, an accumulator relevancy determinator, a recency module, and a scope-based scorer (col. 13, line 64 - col. 14, line 10, teaches candidates are ranked based on the degrees of relaxation in matching words in the document with words in the query, “...exactly match, match

through semantically query relaxation, match through syntactically query relaxation and do not match..." and "ranking (scores) for M documents").

Regarding claims 8 and 15, Li teaches a method and computer readable medium for generating a response comprising: establishing relationships among a concept and other concepts, where at least one of said other concepts is associated with a definition specific to an organization (col. 11, ll. 28-36, teaches translating words into "higher level semantic concept[s]...expand the semantic concepts to include syntactic relationship as well as the proper names in the original query are expanded to include relevant words from the co-occurrence table; Fig. 4c includes concepts associated with a definition specific to an organization [e.g. Ford, Buick™]);

creating a semantic index that uses said concept for identifying information (Figs. 3 and 4 illustrate index tables derived by grouping words into semantically similar concepts);

parsing a query into elements, where at least one of said elements corresponds to said concept (col. 11, ll. 20-26, "Fig. 6 shows...A query 'retrieve documents containing the words car and dealer' is rewritten as shown by adding additional words relevant to car and dealer...relevant words of semantic similarity and syntactic co-occurrence relationship are determined"; parsing the query into "car" and "dealer");

retrieving units of information using said semantic index (col. 11, ll. 20-36, teaches, after receiving said elements, "relevant words of semantic similarity and syntactic co-occurrence relationship are determined from tables in Fig. 3"); and

generating a plurality of portions of a display, each of which presents information based on the importance of a corresponding unit of said information (col. 13, ll. 37-63, teaches

"matching keywords are retrieved for ranking...rank their degrees of relevance...ranked based on the degrees of relaxation in matching words in the document with words in the query..."; Fig. 8).

Regarding claims 11 and 17, Li teaches wherein parsing said query further comprises: comparing a set of rules against said elements and determining that one or more of said elements satisfy a condition of a rule of said set of rules; and identifying an action associated with said rule (col. 11, ll. 20-24, "Fig. 6 shows...A query 'retrieve documents containing the words car and dealer' is rewritten as shown by adding additional words relevant to car and dealer"; parsing the query into "car" and "dealer"; col. 11, ll. 20-36, teaches, after receiving said elements, "relevant words of semantic similarity and syntactic co-occurrence relationship are determined from tables in Fig. 3...multi-granularity query expansion").

Regarding claims 12 and 18, Li teaches wherein retrieving said units of information further comprises evaluating the importance of each of said units to form said response to said query (col. 13, ll. 37-63, teaches "matching keywords are retrieved for ranking...rank their degrees of relevance...ranked based on the degrees of relaxation in matching words in the document with words in the query..."; Fig. 8).

Regarding claim 13, Li teaches wherein the importance of at least one of said units is based on the relevancy of said concept to a document (col. 13, line 64 - col. 14, line 10, teaches candidates are ranked based on the degrees of relaxation in matching words in the document with words in the query, "...exactly match, match through semantically query relaxation, match through syntactically query relaxation and do not match..." and "ranking (scores) for M documents").

Regarding claim 14, Li teaches wherein generating said plurality of portions further comprises scoring various scopes of said units of information (col. 13, line 64 - col. 14, line 10, teaches candidates are ranked based on the degrees of relaxation in matching words in the document with words in the query, "...exactly match, match through semantically query relaxation, match through syntactically query relaxation and do not match..." and "ranking (scores) for M documents").

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Ho, US Patent 5,884,302.

Regarding claim 9, Li teaches associating said concept with one of a natural language term, an industry-specific term, and an organization-specific term (Fig. 8, e.g. 'Ford'), and one of a rigid phrase, a compositional phrase and an expression (Fig. 8, e.g. 'sales office').

Li does not explicitly teach associating said concept with a part of speech. However, Ho teaches in col. 2, ll. 9-13, a system and method to answer a question, "analyzes the grammatical structure of the natural-language question for parsing it into its grammatical components based on a pre-defined context-free grammatical structure." It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching elements of

Li and Ho because Ho teaches this allows the user to enter his question using natural language (col. 2, ll. 17-26).

8. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li in view of Wakefield *et al.* (“Wakefield”), US Patent 2004/0167870.

Regarding claims 10 and 16, Li teaches wherein creating said semantic index further comprises: storing managed answers and generating at least one index for retrieving information from either said imported content or said stored managed answers (col. 15, ll. 12-19, teaches, “a database for storing a collection of documents...database may include an index for storing concepts (e.g. semantical or syntactical concepts) and their relationships to the documents in the collection”).

Li does not explicitly teach, but Wakefield suggests importing structured and unstructured content (Fig. 2 illustrates an exemplary method of integrating relationally structured data with unstructured data; paragraph 56 and 58). It would have been obvious for one of ordinary skill in the art at the time the invention was made to combine the teaching elements of Li with Wakefield to import structured and unstructured content because Wakefield teaches in paragraph 49, “[r]elationally structured data, however, may only represent a portion of the data collected by an organization...amount of unstructured data available may often exceed the amount of structured data”; and paragraph 63 provides examples of how various organizations would benefit from Wakefield’s systems and methods for providing a mixed data integration service.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Chen et al. (US Patent 7,177,795) teaches methods and apparatus for semantic unit based automatic indexing and searching in data archive systems.

Liddy et al. (US Patent 6,026,388) teaches a user interface and other enhancements for natural language information retrieval system and method.

Cooperman et al. (US Patent Pub. 2004/0024739) teaches a system and method for implementing a knowledge management system.

Marchisio et al. (US Patent Pub. 2003/0233224) teaches a method and system for enhanced data searching.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eunice Ng whose telephone number is 571-272-2854. The examiner can normally be reached on Monday through Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached on 571-272-7843. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/E. N./
Examiner, Art Unit 2626

/David R Hudspeth/
Supervisory Patent Examiner, Art Unit 2626